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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,523	01/14/2004	Jae-Hwang Kim	8836-213 (IB12284-US)	5575
22150	7590	07/01/2005	EXAMINER	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			HUYNH, ANDY	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK EK

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/758,523	KIM ET AL.	
	Examiner	Art Unit	
	Andy Huynh	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 16-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-15 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/14/04, 12/22/04</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

In the Response to Restriction Requirement dated 06/15/05, Applicant's election with traverse Group I (Claims 1-15) drawn to a device is acknowledged. Accordingly, Claims 16-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 35 § 1.142(b) and MPEP § 821.03. Applicant has the right to file a divisional application covering the subject matter of the non-elected claims 16-21, drawn to a method.

The traversal is on the ground(s) that the reason is speculative. That is not found persuasive because

(a) The above two different classifications show the need for two entirely different fields of a search.

(b) The inventions are in different statutory classes which have different case law basis for examination.

(c) Non-restriction would mean that if one of the inventions were held to be unpatentable then the other would also be inherently held to be unpatentable. Therefore, restriction is proper since there are apparently two different inventive concepts in making the device and in the device itself.

The requirement is still deemed proper and is therefore made **FINAL**.

***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) based on an application filed in REPUBLIC OF KOREA, 2003-08791 on 02/12/2003.

***Information Disclosure Statement***

This office acknowledges receipt of the following items from the applicant: Information Disclosure Statement (IDS) filed 01/14/2004 and 12/22/2004. The references cited on the PTOL 1449 form have been considered.

***Specification***

The disclosure is objected to because of the following informalities:

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Drawings***

The drawings are objected for the following reason.

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Hofmann et al. (USP 6,673,677 hereinafter referred to as “Hofmann”).

Regarding claim 1, Hofmann discloses in Fig. 5 and the corresponding texts as set forth in column 3, line 55-column 6, line 58, a memory cell, comprises:

a source region 6a and a drain region 6b formed in a semiconductor substrate 1, wherein the source region and the drain region are separated by a predetermined distance;

a channel region defined between the source region and the drain region;

a first charge storage layer 3 formed on the channel region adjacent the source region 6a;

a second charge storage layer 3 formed on the channel region adjacent the drain region 6b;

a gate insulating layer 10 formed on the channel region between the first and second charge storage layers; and

a gate electrode 11 formed on the gate insulating layer and the first and second charge storage layers.

Regarding claims 2-4, Hofmann discloses in Fig. 5 the first and second charge storage layers each include a tunnel oxide layer 2, a charge trapping layer 3 and a blocking insulating layer 4 in a stacked formation; the gate insulating layer has an equivalent oxide thickness less

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than a thickness of each one of the first and second charge storage layers; and the gate insulating layer comprises sidewalls that are aligned with sidewalls of the first and second charge storage layers.

Regarding claim 5, Hofmann discloses in Fig. 5 the gate electrode comprises a gate pattern 11 formed on the gate insulating layer; and a gate sidewall pattern 9 formed on each of the first and second charge storage layers.

*Allowable Subject Matter*

Claims 6-15 are allowed. The following is a statement of reason for the indication of allowable subject matter: Claims 6-15 are considered allowable since the prior art made of record and considered pertinent to the application's disclosure do not teach or suggest the claimed limitations. Regarding Claims 6-9, the prior art of record fails to teach or render obvious a memory cell comprises at least one lower sidewall pattern formed on at least one of the at least two charge storage layers; and at least one upper sidewall pattern formed on the at least one lower sidewall pattern, wherein the at least one upper sidewall pattern electrically contacts the at least one lower sidewall pattern and the gate pattern, and in combination with all other features as recited in claim 6; and regarding Claims 10-15, the prior art of record fails to teach or render obvious a memory cell comprises at least one lower sidewall pattern formed on at least one of the at least two charge storage layers; and at least one upper sidewall pattern formed on the at least one lower sidewall pattern, wherein the at least one lower sidewall pattern electrically insulated from the at least one upper sidewall pattern and the gate pattern, and in combination with all other features as recited in claim 10.

*Conclusion*

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh, (571) 272-1781. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

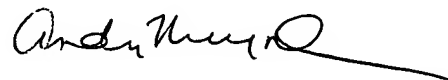
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The Fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the -status of this application or proceeding should be directed to the receptionist whose phone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ah

06/29/05



Andy Huynh

Patent Examiner